



City of Bulverde

# TRANSPORTATION MASTER PLAN

Transportation Master Plan Presentation

Bulverde-Spring Branch Economic Development Foundation (EDF) Transportation Forum  
GVTC Auditorium, October 16, 2014





# City of Bulverde Transportation Master Plan

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**Presentation to Bulverde-Spring Branch (BSB) Economic  
Development Foundation (EDF) Transportation Forum**

**By  
John German, PE, PWLF**

**HNTB Corporation**

**October 16, 2014**



# CITY OF BULVERDE

## PROPOSED TRANSPORTATION MASTER PLAN

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### DISCLAIMER:

The proposals and recommendations included in this presentation are those of the authors, who represent the HNTB Corporation. Although this material has been presented to the City Staff, Mayor, City Council, and Planning and Zoning Commission, those persons and groups have not taken any official action to accept or to approve the proposals and recommendations included herein. This is a preliminary report that will be considered by City of Bulverde officials over the next few weeks, and they will consider appropriate actions that may be taken related to the various proposals and recommendations. However, the City is asking for and accepting comments from the residents and business owners in the area to help them in the evaluation process.





## CITY OF BULVERDE TRANSPORTATION STUDY ACTIONS

- HNTB Authorized to Conduct Transportation Study- Feb., 2014
- Work began in April, 2014
- Initial Tasks Included:
  - Met with City Staff and reviewed City's Sunrise 2025 Plan
  - Conducted City Leadership Transportation Retreat- July 1, 2014
    - Mayor and Council
    - Planning and Zoning Commission
  - Held Stakeholder Focus Groups- July 9 and 10, 2014
    - EDF, Chamber, Comal County, and other Community Groups
    - Other Public Agencies and Utility Companies in Bulverde Area
    - Development, Real Estate, Land Owner, and other interested parties
  - Prepared summaries of the meetings





## OTHER STUDY ACTIONS

- Coordinated with Comal County, TxDOT, and MPO and reviewed their current plans
- Gained access to the Comal County GIS for the Bulverde area
- Developed preliminary maps depicting highways, city and county roadways, creeks/floodplain, topography, zoning, population, density, traffic volumes, employment, city limits, new developments, ETJ boundaries, and other data.
- Gathered existing traffic count data and determined capacity limitations
- Gathered MPO's 2040 population, employment, and traffic data
- Attended additional meetings with BSB EDF, TxDOT, and city staff
- Moderating a Bulverde-Spring Branch EDF Transportation Forum and presenting the Transportation Master Plan for the Bulverde-SB area on Oct. 16, 2014



# WHAT IS A TRANSPORTATION MASTER PLAN (TMP)?

- ❖ A planning tool that is available to cities to demonstrate to citizens, other public agencies (Comal County, Bexar County, TxDOT, etc.) and to developers that there is a coherent plan being used by the City to identify and meet the local needs for new or expanded transportation facilities. The TMP provides the regulatory authority to require developers to make improvements or take actions as they develop property, to include right of way dedications and reservations; roadway, bridge, hike and bike trail, sidewalks, and other infrastructure construction; and ensure local standards are met by other agencies, developers, and utility agencies as development occurs,
- ❖ The TMP is critical to executing regional funding efforts.



# TRANSPORTATION MASTER PLAN

## ✗ IS:

- + A 50,000 foot viewpoint (a high level plan)
- + A compendium of available information; very little new data was developed
- + An aggregation of data into area wide framework
- + An approximate location for new roadways using planning corridors 500 feet to 1000 feet wide

## ✗ IS NOT:

- + A detailed traffic study with counts on all roadways
- + A “traffic model” used for project planning or engineering studies
- + The fixed alignment for proposed new roadways or other infrastructure projects
- + Intended for use in locating new roadways, but project level studies and data collection are needed in the individual project design process





# EXPLANATION OF TMP PROJECT DELIVERY

- ✘ Projects are first to be delivered by others:
  - + Residential developers, landowners, new or expanding employers, or commercial firms
  - + TxDOT or other state and federal agencies
  - + Comal County
- ✘ And then by the City as funds are budgeted & available using:
  - + Local taxes and fees
  - + Leveraging other financing options
  - + Tax Increment Financing (TIF) or Tax Increment Reinvestment Zone (TIRZ)
  - + City Bond Funds
  - + Pay-as-you-go approach
  - + Public Private Partnerships (PPP)
  - + Short-term financing options
  - + All of the above



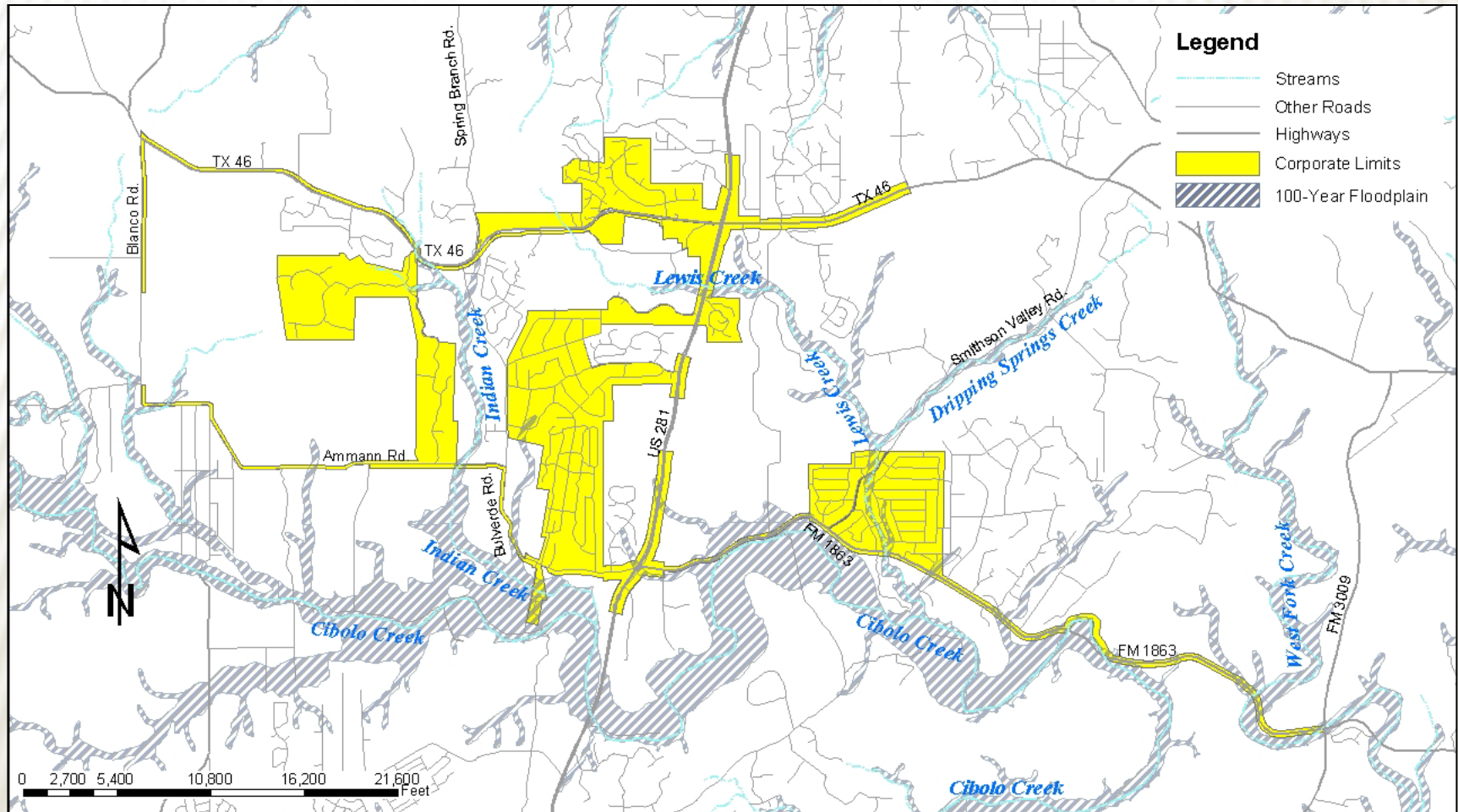
# EXISTING CONDITIONS







# CITY OF BULVERDE CITY LIMITS, CREEKWAYS, AND MAJOR HIGHWAYS

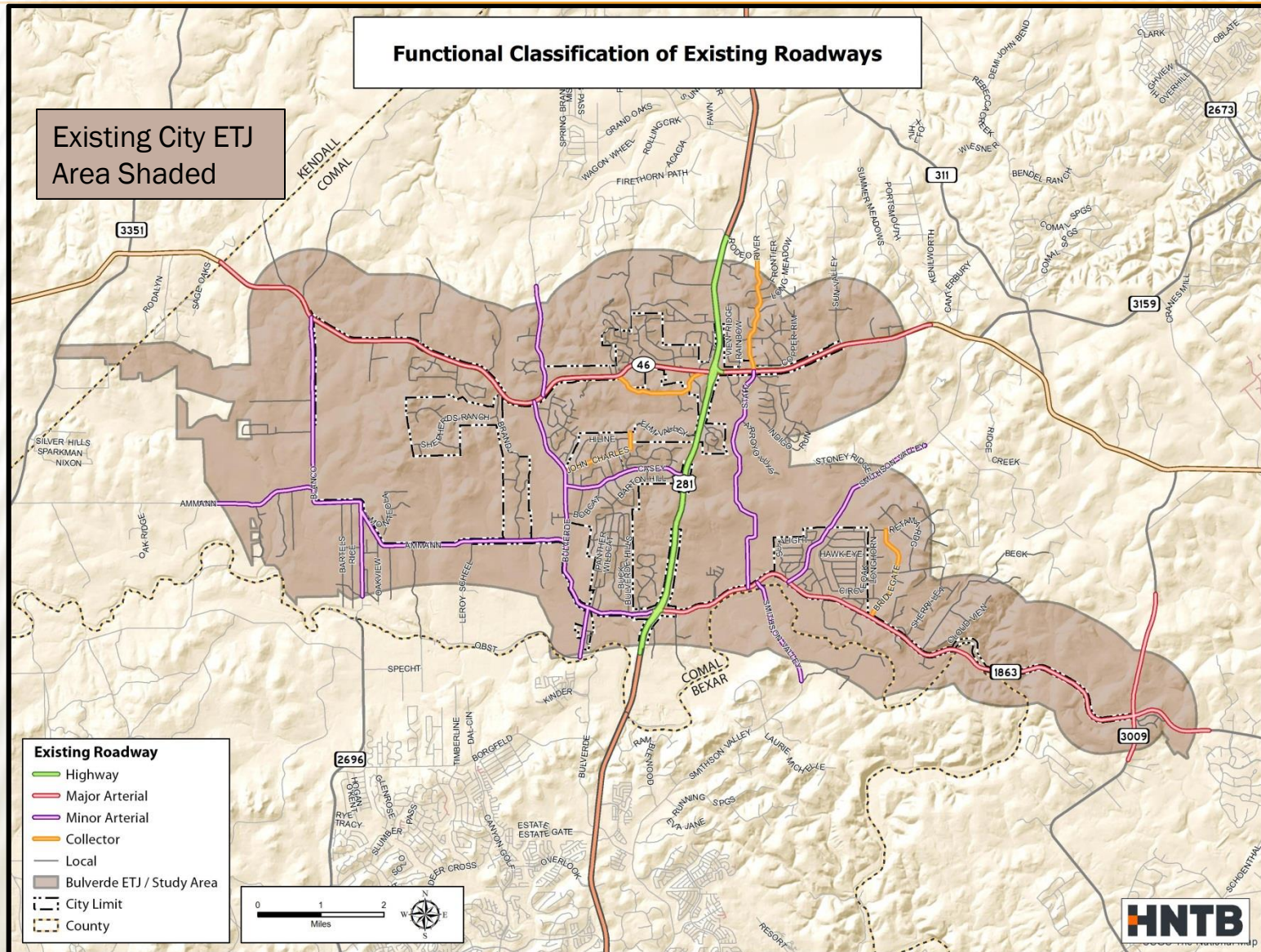






# CITY OF BULVERDE

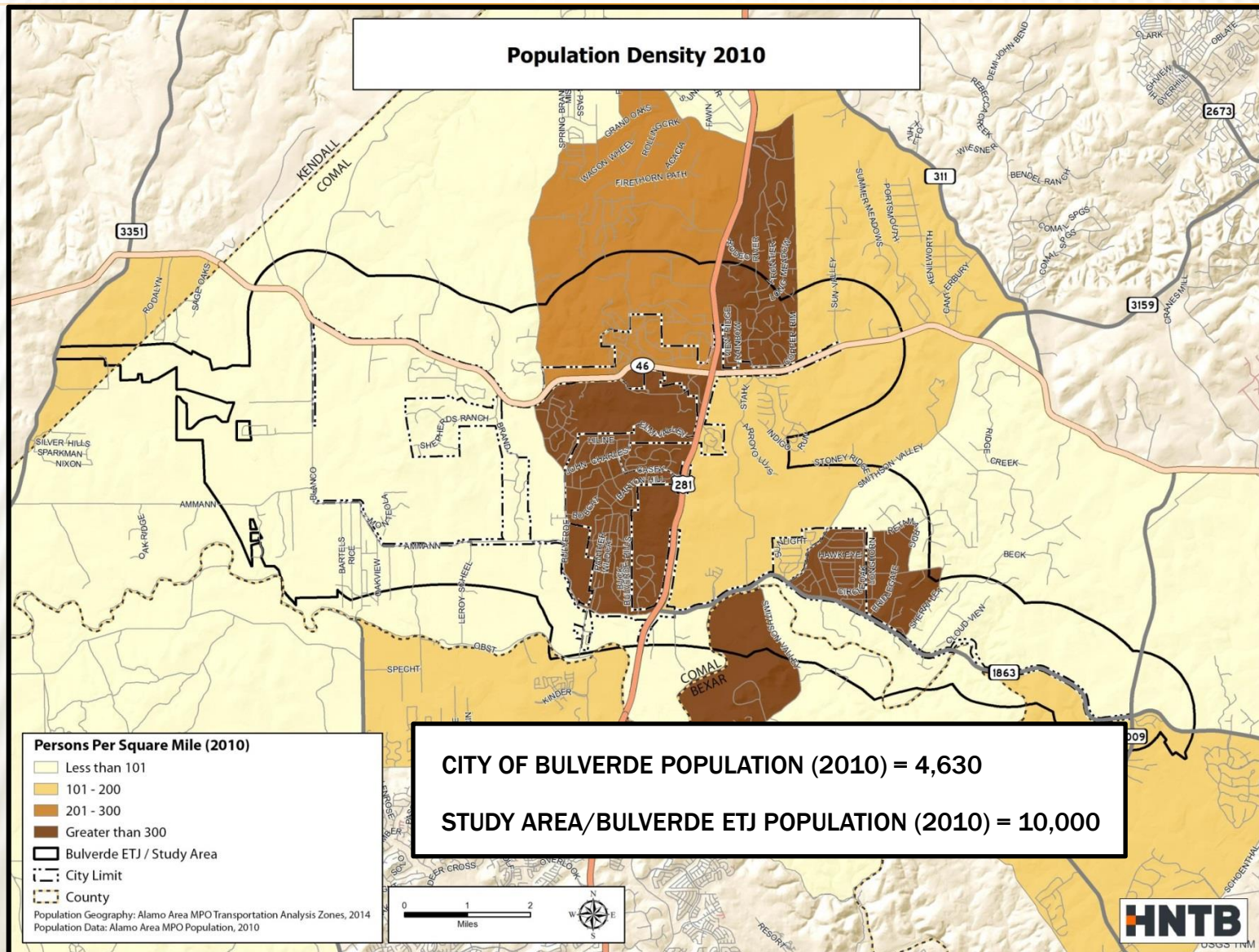
## EXISTING TRANSPORTATION NETWORK







# BULVERDE AREA 2010 POPULATION

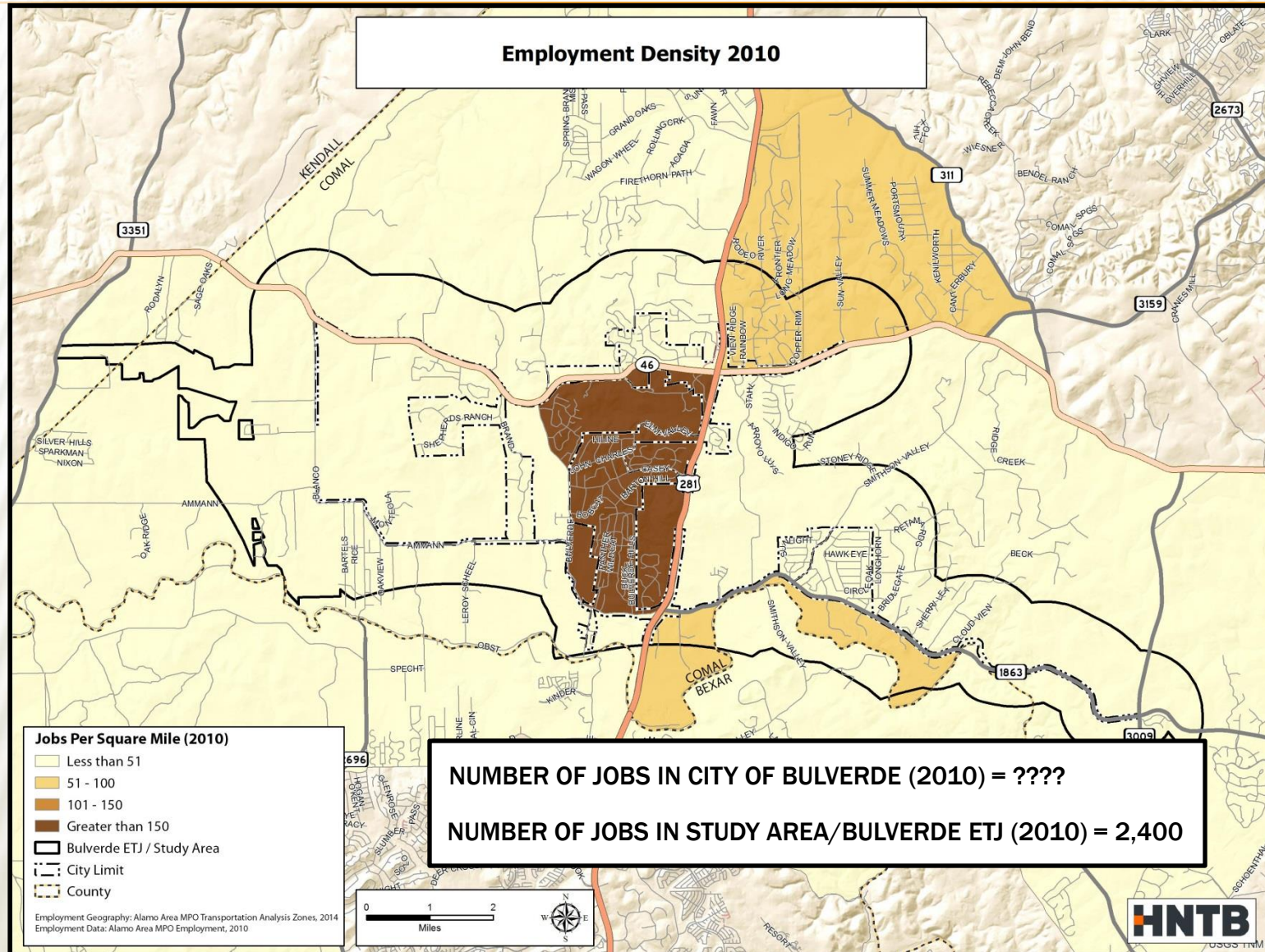


SOURCE: ALAMO AREA MPO, 2014





# BULVERDE AREA 2010 EMPLOYMENT



SOURCE: ALAMO AREA MPO, 2014



# EXISTING BULVERDE AREA TRANSPORTATION NETWORK

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- Existing Primary Highways (Regional)
  - US 281 North-Bexar/Comal County Line to Blanco/County Line
  - SH 46-Kendall/Comal County Line to FM 3159
  - FM 1863-US 281 to FM 3009
  - Blanco Road (FM 2696) – South ETJ Boundary to SH 46
  - FM 3009-South ETJ Boundary to North ETJ Boundary-N. of FM 1863





# EXISTING BULVERDE AREA TRANSPORTATION NETWORK

- Existing Primary Arterials (Local)
  - Bulverde Road-US 281 to SH 46
  - Ammann-Bulverde to West City Limit
  - Spring Branch Road-SH 46 to North ETJ Boundary
  - Smithson Valley Road- FM 1863 to SH 46
- Existing Collector Streets
  - Casey-Bulverde to US 281
  - Stahl Road-FM 1863 to SH 46
  - River Way-SH 46 to River Crossing
  - Bulverde Lane-S. City Limit/Obst to Bulverde Rd
  - Old Bulverde Road-SH46 to SH 46 at US 281
  - Bulverde Crossing-SH 46 to US 281







# AVERAGE DAILY TRAFFIC COUNTS BY TXDOT

<b>Hwy. 281 @ Comal/Bexar County Line</b>	
Northbound/Southbound	29,000
<b>FM 1863 @ Hwy. 281</b>	
Eastbound/Westbound	7,400
<b>Hwy. 281 @ Hwy. 46</b>	
Northbound/Southbound	21,000/28,000
Eastbound/Westbound	17,800/16,000
<b>Hwy. 281 @ FM 311</b>	
Northbound/Southbound	14,800
Eastbound/Westbound	1,750
<b>Hwy. 281 @ FM 306</b>	
Eastbound/Westbound	5,200
<b>Hwy. 46 @ FM 3159</b>	
Northbound/Southbound	5,500

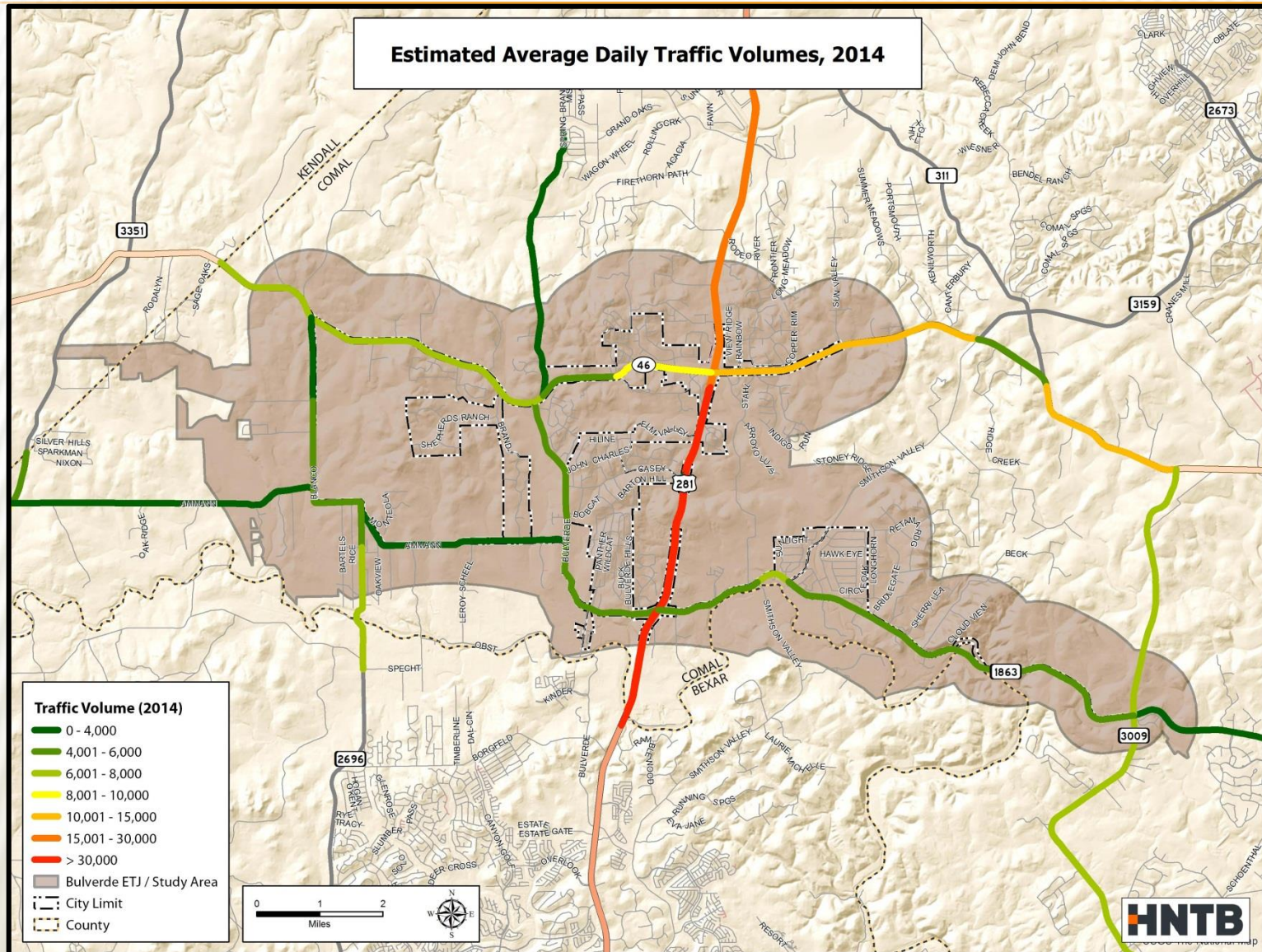
<b>Hwy. 46 @ FM 311</b>	
Northbound/Southbound	2,200
Eastbound/Westbound	5,400
<b>FM 3009 @ Hwy. 46</b>	
Northbound/Southbound	2,500
<b>FM 1863 @ FM 3009</b>	
Eastbound/Westbound	2,700
Northbound/Southbound	4,200
<b>FM 2696 @ Comal/Bexar County Line</b>	
Northbound/Southbound	2,200
<b>FM 306 @ Cranes Mill Rd.</b>	
Eastbound/Westbound	4,000

\*Source: TxDOT 2011 San Antonio District Traffic Map





# ESTIMATED 2014 AVERAGE DAILY TRAFFIC (ADT)

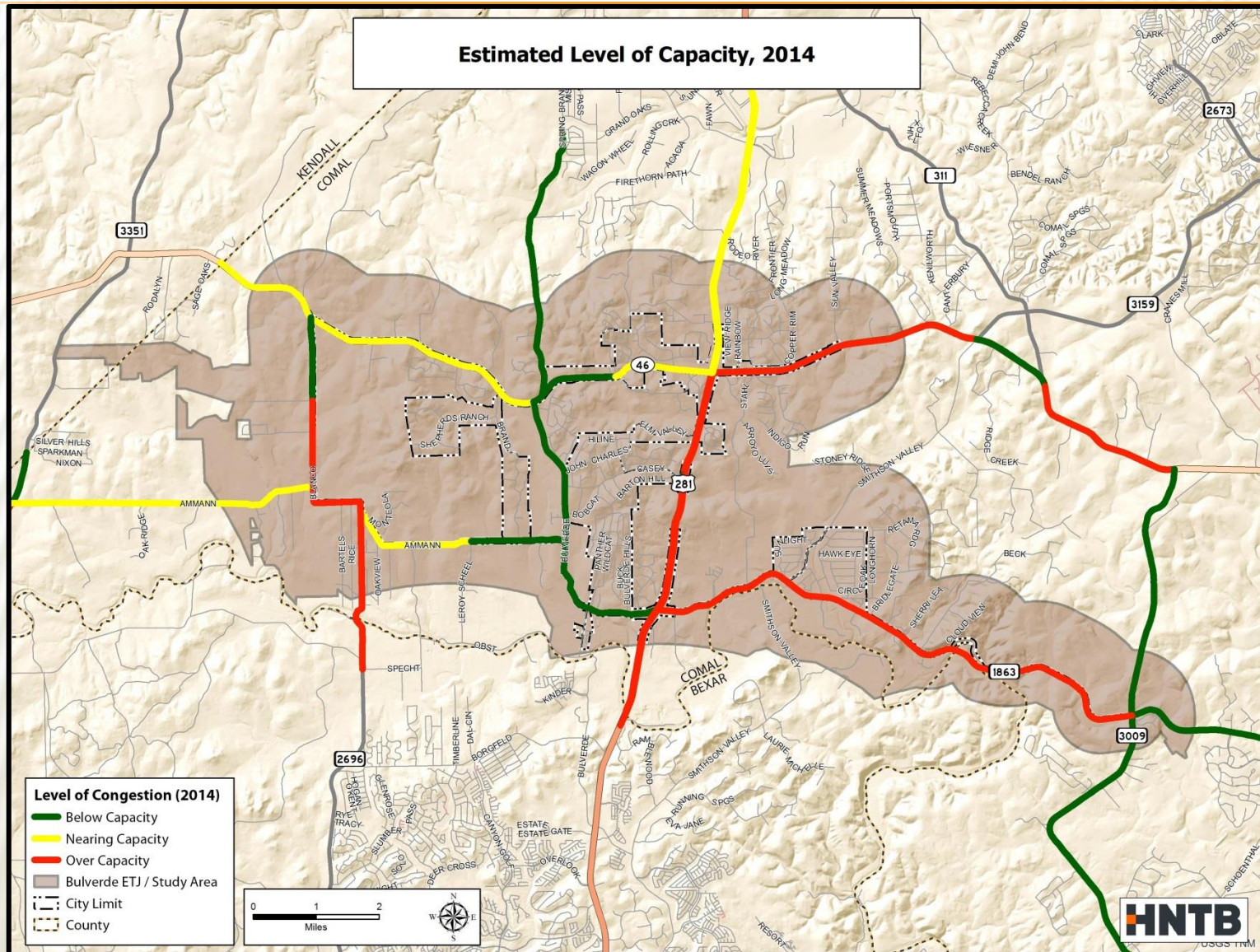


SOURCE: ALAMO AREA MPO, 2014





# ESTIMATED VOLUME TO CAPACITY RATIO (2014)



SOURCE: ALAMO AREA MPO, 2014



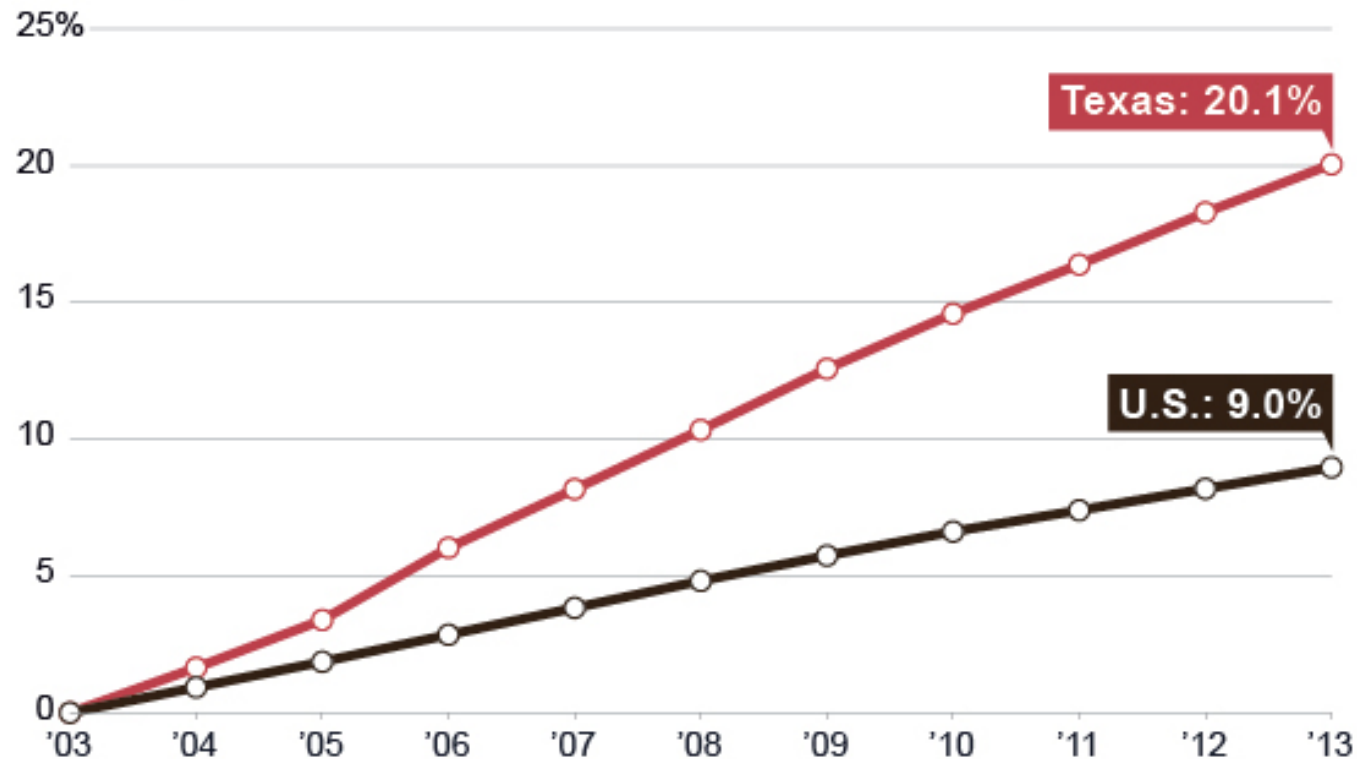
# FUTURE TRENDS





# TEXAS POPULATION GROWTH

Texas' population has grown at more than twice the rate of the nation's over the past decade.



Source: U.S. Census Bureau

The Wall Street Journal





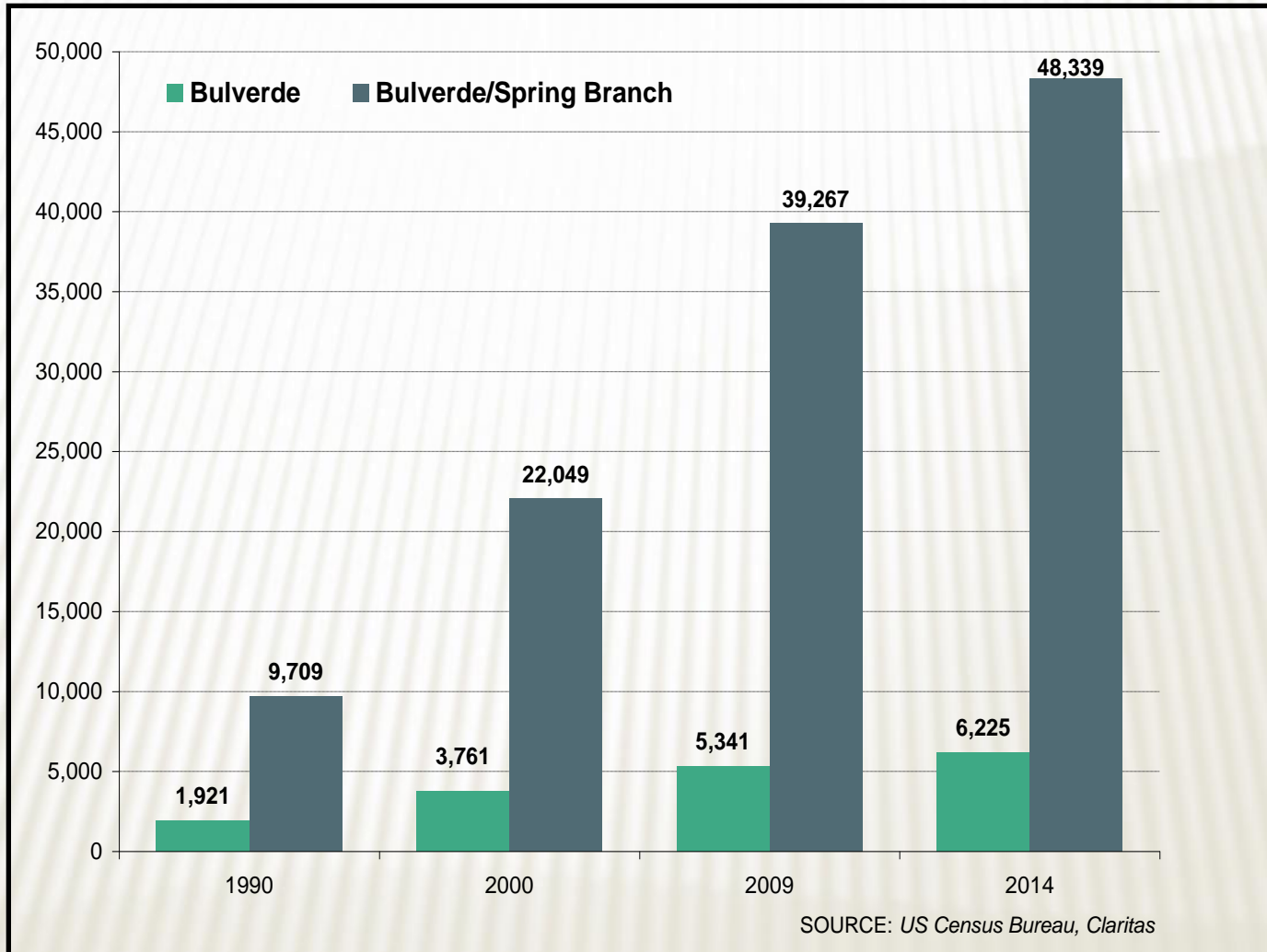
# REGIONAL POPULATION

	Population Forecast				Employment Forecast			
	2010	2040	Growth	%	2010	2040	Growth	%
<b>Bexar</b>	1,714,773	2,747,163	1,032,390	60%	781,905	1,448,533	666,628	85%
<b>Comal</b>	108,472	260,133	151,661	140%	42,740	108,553	65,813	154%
<b>Guadalupe</b>	131,533	334,026	202,493	154%	33,929	94,288	60,359	178%
<b>Kendall</b>	33,410	62,821	29,411	88%	11,902	23,083	11,181	94%

SOURCE: ALAMO AREA MPO, 2014



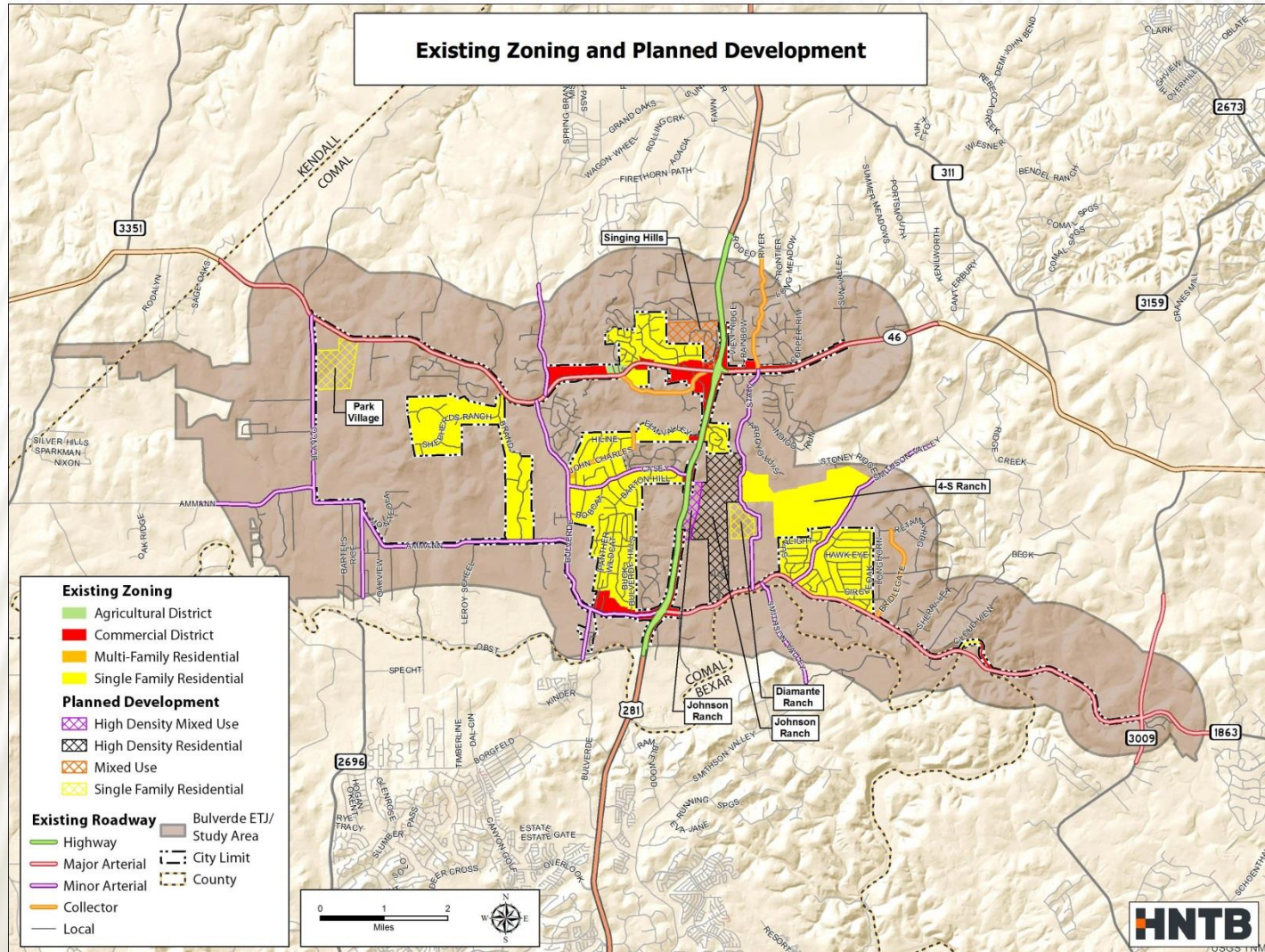
# BULVERDE/SPRING BRANCH POPULATION







# PLANNED DEVELOPMENT BULVERDE ETJ AND NEARBY

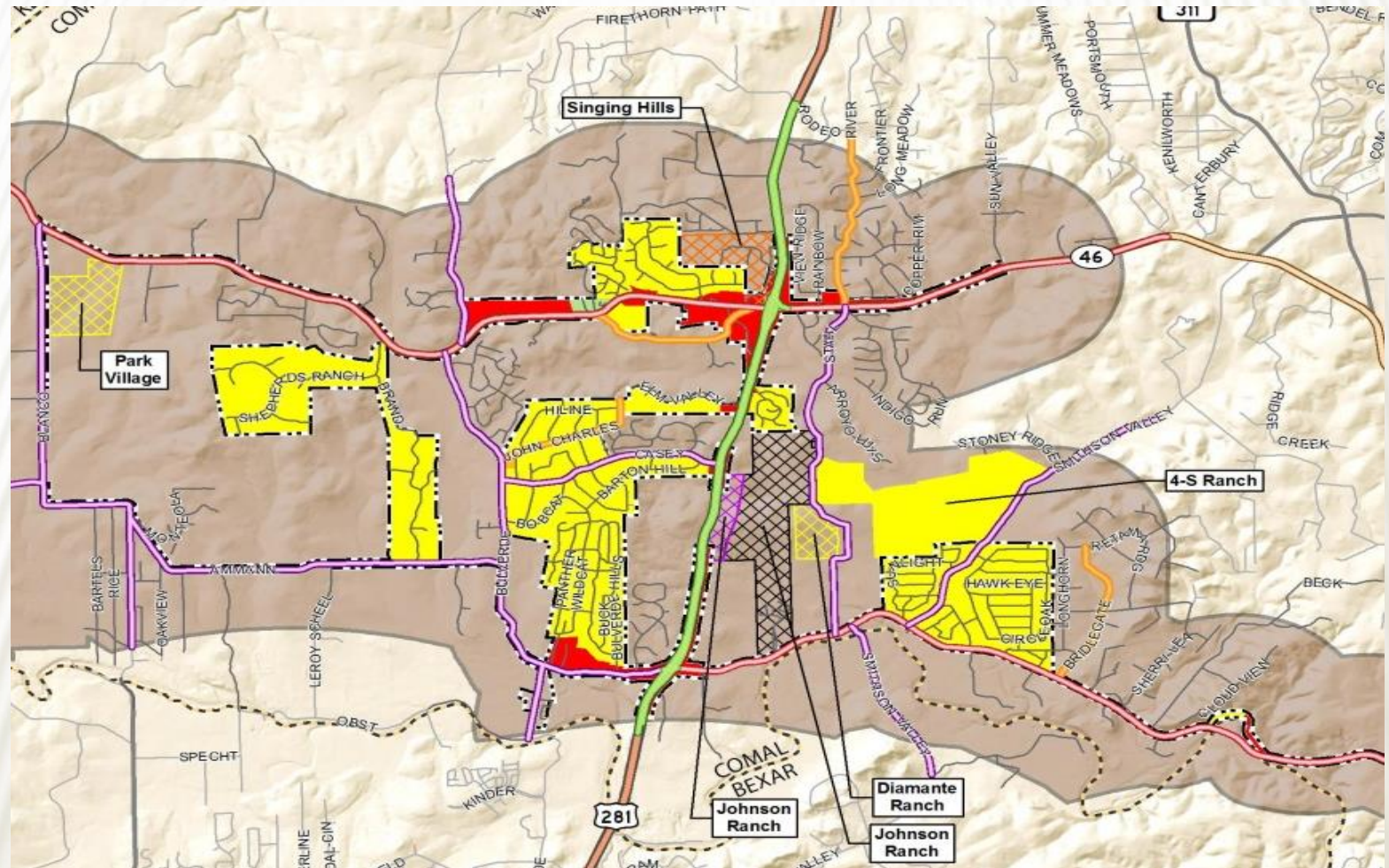


SOURCE: CITY OF BULVERDE, 2014





# ZONING AND PLANNED DEVELOPMENT CURRENT CITY LIMITS AND NEARBY

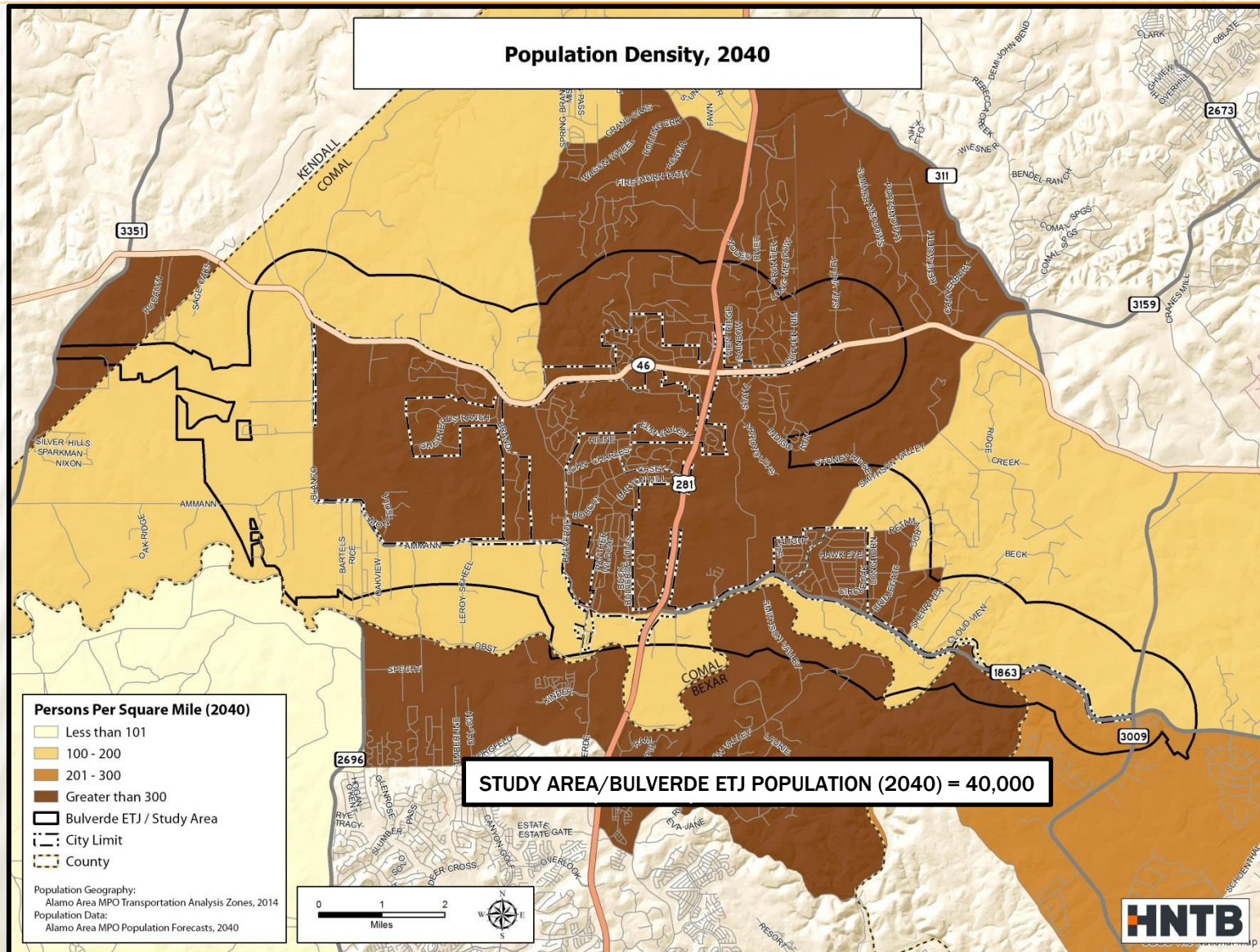


Existing Zoning and Proposed Developments -2014





# STUDY AREA 2040 POPULATION

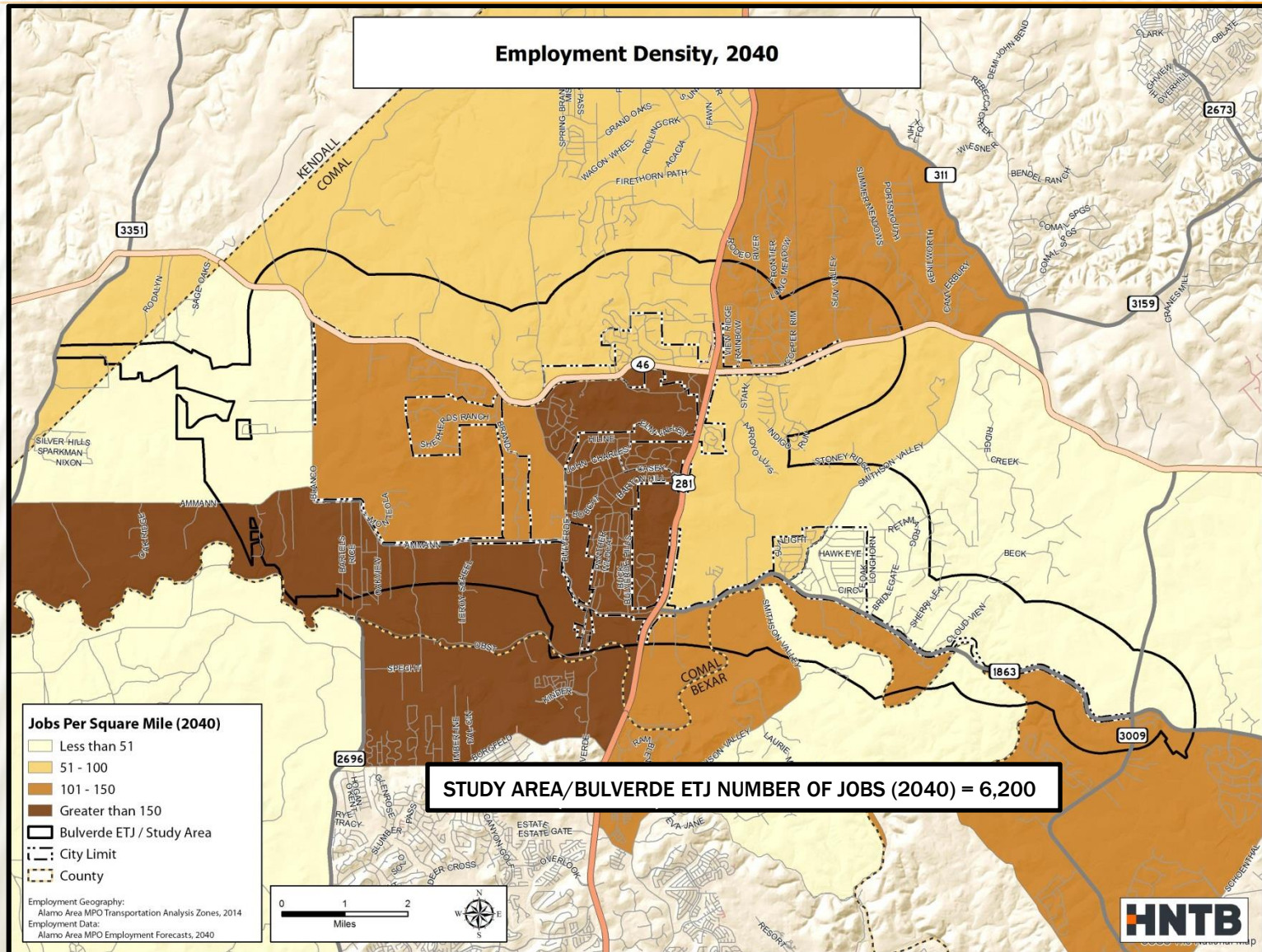


SOURCE: ALAMO AREA MPO, 2014





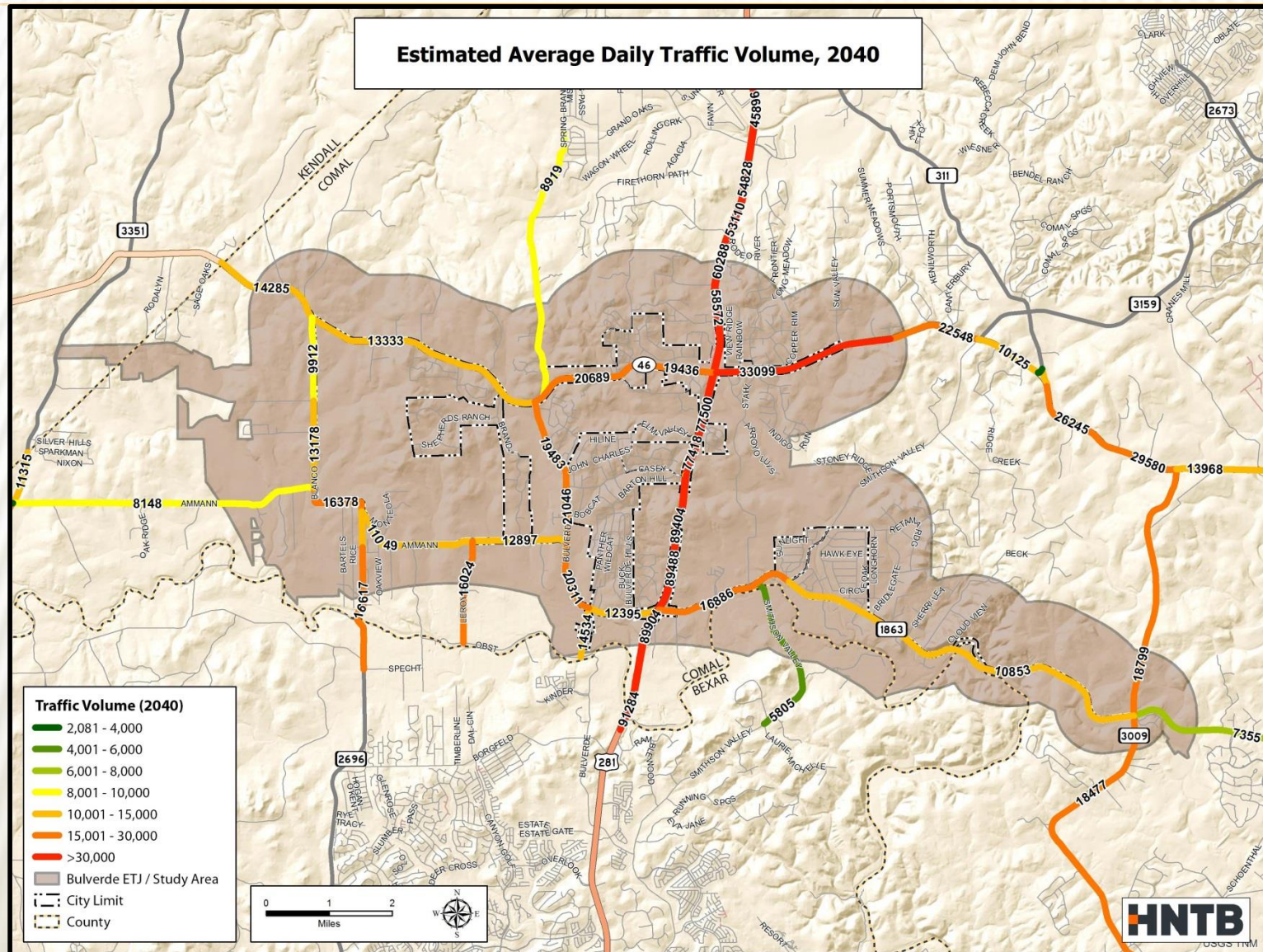
# STUDY AREA 2040 EMPLOYMENT







# ESTIMATED AVERAGE DAILY VOLUMES, 2040

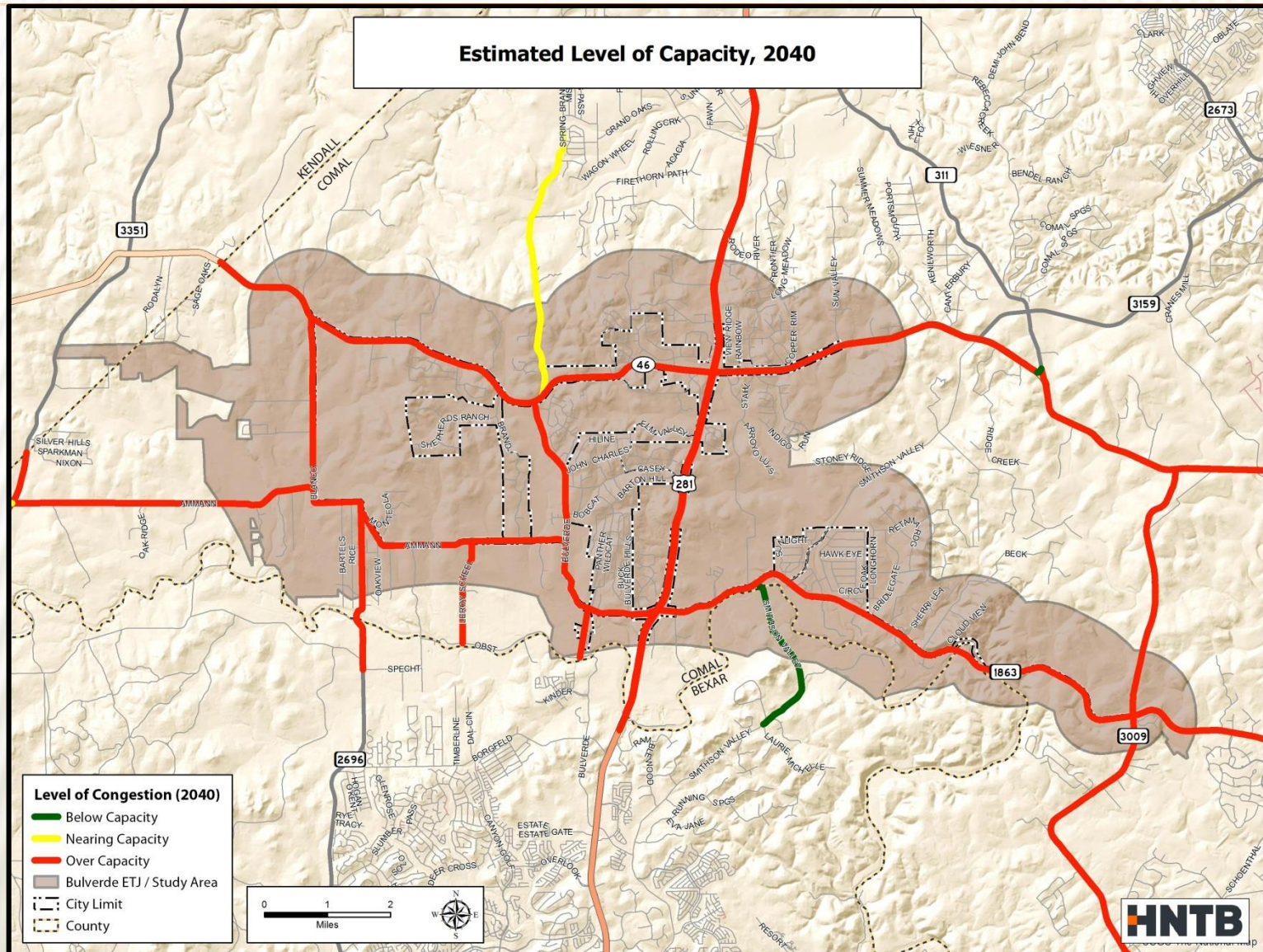


SOURCE: ALAMO AREA MPO, 2014





# ESTIMATED LEVEL OF CAPACITY, 2040



SOURCE: ALAMO AREA MPO, 2014





# TRANSPORTATION STUDY RECOMMENDATIONS



# ROADWAY SELECTION





# ROADWAY SELECTION PROCESS

- Conducted needs analysis by analyzing existing and future population, employment, and transportation conditions data
- Conducted Public Meetings, Council Retreat, Focus Groups
- Received input from the development community.
- Examined the current developments in the area and considered the growth trends throughout the ETJ
- Developed preliminary system of expanded existing roadways and new roadways
- Reviewed concepts with City Staff
- Considered the future viability of each proposed new arterial
- Assigned street classifications for each roadway in the Plan
- Determined appropriate locations for Hike and Bike Trails, new bridges, and Transit Park and Ride Lot and Station
- Captured this data on a single GIS-Based map

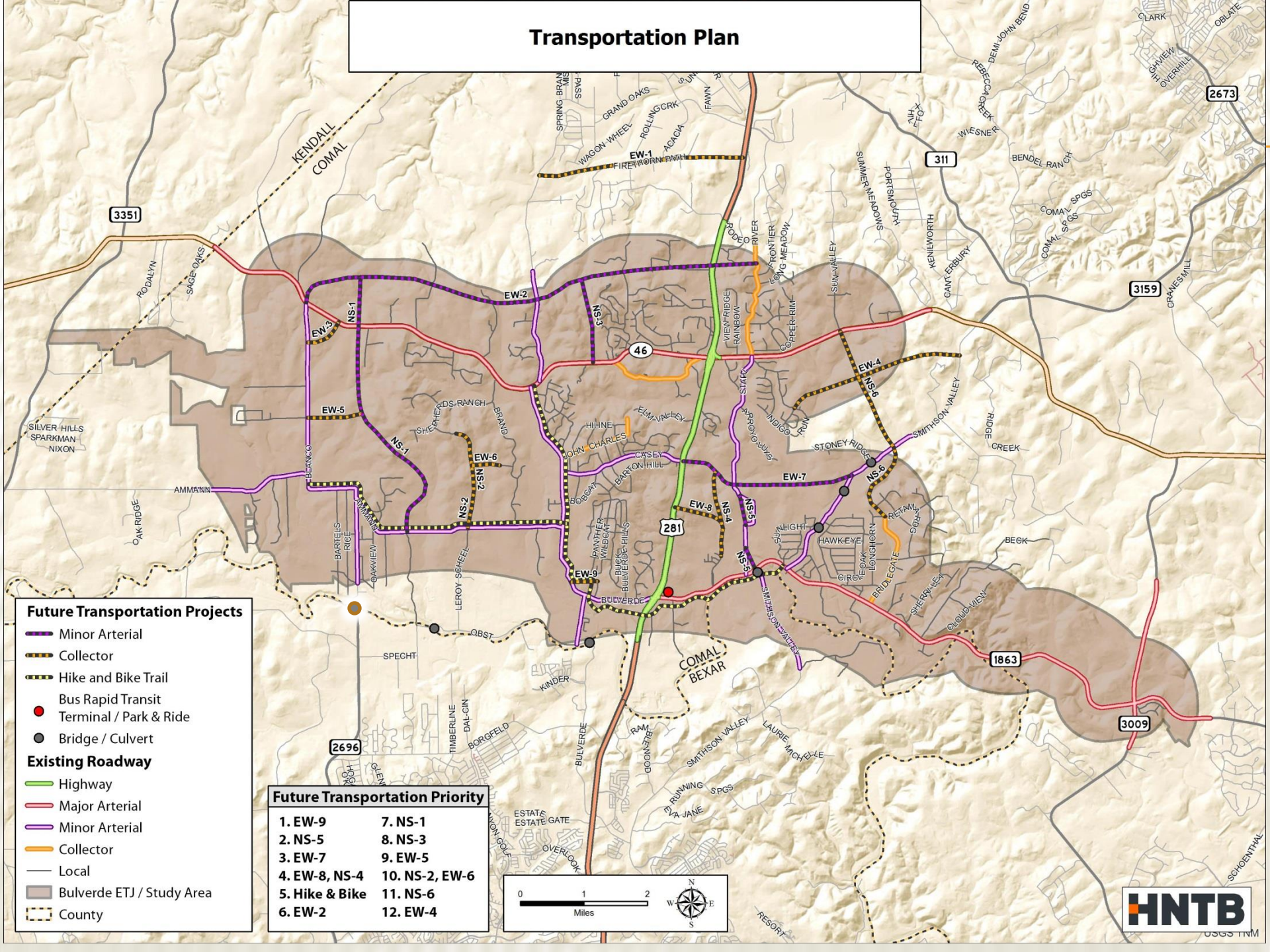


# EXPANSION OF EXISTING ROADWAYS

- ❖ TxDOT Roadways
  - Based upon meetings and discussions with TxDOT, MPO, and Comal County officials, and TxDOT Public Meetings
- ❖ City Streets and County Roads in the ETJ
  - Based upon current and projected development patterns
  - Evaluation of the population growth and increase in traffic volumes over next 20 years
  - Trends witnessed in other suburban cities
  - Coordinated with city staff
  - Public input



# Transportation Plan







# TXDOT HIGHWAY IMPROVEMENTS

## US 281

- Short Term Improvements
  - Make ramp changes and U-Turn improvements at SH 46
  - Add “enhanced turn-arounds” for the Singing Hills Development
  - Initiate emergency vehicle signal pre-emption along US 281
  - Install traffic signals as needed at critical intersections as traffic volumes increase and safety issues arise.
  - Add signal system control and coordination for all traffic signals
- Long Term Improvements
  - Add overpasses at critical intersections such as Casey, Rodeo Dr., and River Crossing for public safety purposes
  - Add frontage roads as required to provide local access



- TxDOT could consider traffic operational improvements, like the “Enhanced Turn-Arounds” Concept, as an interim solution.





# TXDOT HIGHWAY IMPROVEMENTS PLANNED

## SH 46

- Short Term Improvements
  - Widen existing SH 46 roadway through City to four (4) through lanes with left and right turns where needed and locate within existing right-of-way (ROW)
  - Coordinate with developers to make improvements required in the SH 46 and US 281 area
  - Connect Old Bulverde Road and Singing Oaks (from Singing Hills) at SH 46
- Long Term Improvements
  - Widen to six-lane roadway with medians
  - Add traffic signals at intersections along SH 46 as needed, and install coordinated signal systems.





# TXDOT HIGHWAY IMPROVEMENTS

## OTHER AREA HIGHWAYS

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### FM 1863

- Nothing proposed at present
- Roadway should be widened to four (4) through lanes with left and right turn lanes where needed for access or where additional capacity is needed at critical intersections
- ROW width should be minimum of 120 feet
- Developers along FM 1863 should be required to dedicate ROW up to 60 feet width measured from the future roadway centerline

### FM 3009

- Nothing proposed at present
- Roadway and ROW requirements should be similar to those for FM 1863 above.

### FM 2696 (Blanco Road)

- Nothing proposed at present
- Roadway and ROW requirements should be similar to those for FM 1863 above.





# City of Bulverde

## Transportation Master Plan

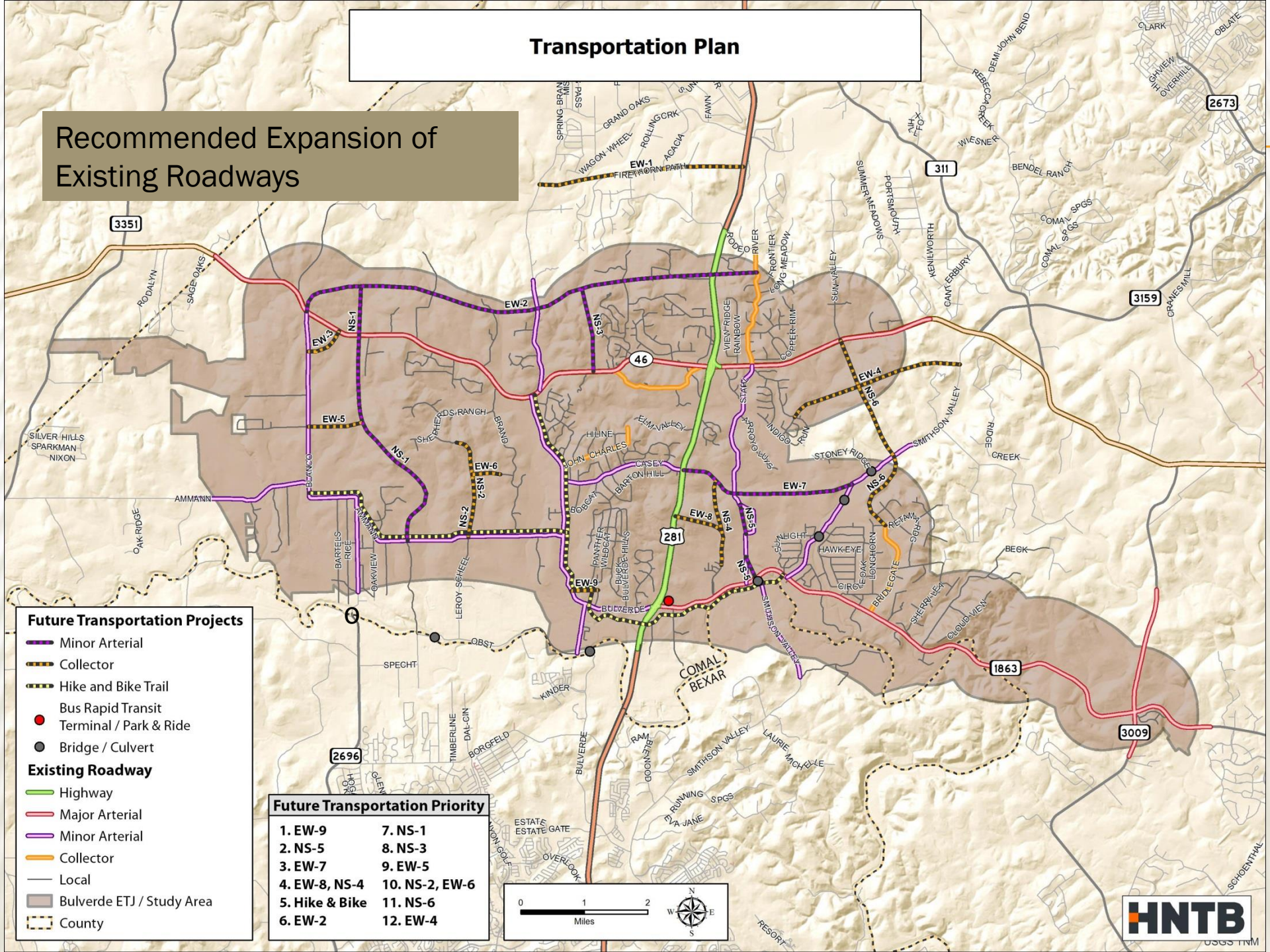
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- Proposed Expansion of Existing Roads in City ETJ
  - West of US 281
    - Bulverde Road
    - Ammann Road
    - Blanco Road
    - Casey Road
    - Spring Branch Road
    - Old Boerne Road
    - Bulverde Lane
  - East of US 281
    - Smithson Valley Rd.-North of 1863
    - Stahl Road Connection to Smithson Valley S.
    - River Way



# Transportation Plan

## Recommended Expansion of Existing Roadways



### Future Transportation Projects

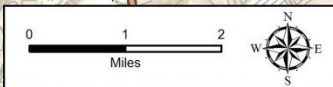
- Minor Arterial
- Collector
- Hike and Bike Trail
- Bus Rapid Transit
- Terminal / Park & Ride
- Bridge / Culvert

### Existing Roadway

- Highway
- Major Arterial
- Minor Arterial
- Collector
- Local
- Bulverde ETJ / Study Area
- County

### Future Transportation Priority

- |                |                |
|----------------|----------------|
| 1. EW-9        | 7. NS-1        |
| 2. NS-5        | 8. NS-3        |
| 3. EW-7        | 9. EW-5        |
| 4. EW-8, NS-4  | 10. NS-2, EW-6 |
| 5. Hike & Bike | 11. NS-6       |
| 6. EW-2        | 12. EW-4       |







# RECOMMENDED EXPANSION OF EXISTING ROADWAYS

Existing Roadways						
Street Name	From	To	Classification	Existing Lanes	Proposed Lanes	Proposed ROW
Smithson Valley Road	S ETJ Limit	N ETJ Limit	Minor Arterial	2	4	86
Stahl Lane	SH 1863	SH 46	Minor Arterial	2	4	86
Bulverde Road	US 281	SH 46	Minor Arterial	2	4	86
Amman Road	Blanco Road	W City Limit	Minor Arterial	2	4	86
Blanco Rd	S City Limit	SH 46	Minor Arterial	2	4	86
Spring Branch Road	SH 46	N City Limit	Minor Arterial	2	3	86
Casey Road	US 281	Bulverde Road	Minor Arterial	2	3	86
Bulverde Lane	Obst Road	Bulverde Road	Minor Arterial	2	3	86
Old Boerne Road	SH 46	SH 46	Collector Street	2	3	72
River Way	SH 46	N City Limit	Collector Street	2	3	72
Bridlegate Drive	SH 1863	Retama Ridge	Collector Street	2	2	72
John Charles Road	Bulverde Road	Hiline Drive	Collector Street	2	2	72



# CITY OF BULVERDE ROADWAY STANDARDS

	Minimum ROW	Min Pavement Width	Design Speed (mph)	Curb and Gutter	
Local Rural	60'	22'	30	No	
Local Urban	50'	30'	30	Yes	
Collector Rural	72'	40'	40	No	
Collector Urban	72'	44'	45	Yes	
Minor Thoroughfare	86'	48'	50	Yes	
Major Thoroughfare	120'	48'-72'	60	Yes	
*Source: City of Bulverde Subdivision Ordinance					





# City of Bulverde

## Transportation Master Plan

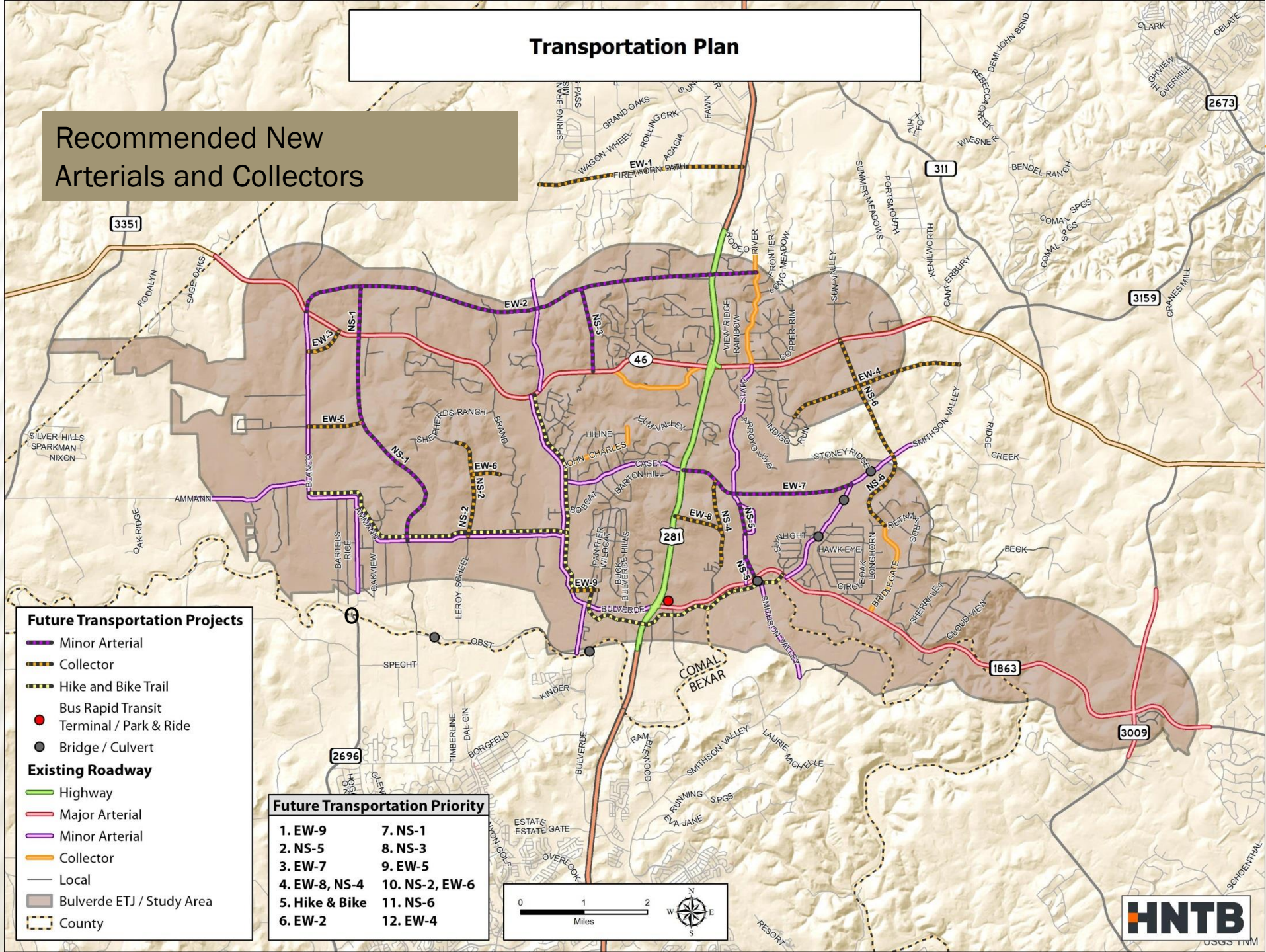
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- Proposed new roadways, trails, bridges, and transit facilities:
  - New Thoroughfares (See following table and map)
  - Downtown Connector
  - Hike and Bike Trails
  - New Bridges and/or culverts
  - Bus Rapid Transit Park and Ride Lot and Station



<p><b>Transportation Plan</b></p>
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## Recommended New Arterials and Collectors







# CITY OF BULVERDE TRANSPORTATION MASTER PLAN

New Streets*					
Timing	Street Designation	Street Name	From	To	Remarks/ Locator
1	EW-9	Downtown Street A	Cougar Bend	Bulverde	Circulation Street
2	NS-5	Stahl Rd	Stahl Road	Smithson Valley	New Connection
3	EW-7	Casey	US 281	Smithson Valley	Extension East of US 281
4a	EW-8	New-Eastside	US 281	NS-4	S. of Casey
4b	NS-4	New-Eastside	FM 1863	EW-7	E. of US 281
5	Hike and Bike Trails	New	Bulverde Lane	Bulverde Road	Also Ammann, FM 1863, Cibolo Creek
6	EW-2	New-Northside	SH 46 @ Blanco	River Way	Parallel to SH 46-Far North
7	NS-1	New-Westside	Ammann	EW-2	New Arterial parallel to Blanco Rd
8	NS-3	New-Northside	SH 46	EW-2	Circulation Route
9	EW-5	New-Westside	Blanco	NS-1	Circulation
10a	NS-2	New-Westside	Ammann	North	Collector
10b	EW-6	New-Westside	NS-2	East	Collector
11	NS-6	New-Eastside	SH 46	Smithson Valley	Collector
12	EW-4	New-Eastside	Smithson Valley	West	Collector-parallel to SH 46
13	EW-1	New-Northside	US 281	Spring Branch Rd	Collector-Serve new Development
14	EW-3	New-Westside	SH 46	Blanco	Commercial Collector

\*To be constructed as new development occurs.



# CITY OF BULVERDE TRANSPORTATION MASTER PLAN

- Recommend the implementation of a Bridge Replacement Program over next 15 years
- Replace bridges and/or Low Water Crossings like this one



Typical Hill Country Low Water Crossing at Specht-Obst Road





# BRIDGES AND CULVERTS RECOMMENDED FOR REPLACEMENT

- Proposed New Bridges and/or Culverts
  - Blanco Road (FM 2696) at Cibolo Creek (TxDOT)
  - Smithson Valley (s. of FM 1863) at Cibolo Creek
  - Bulverde Lane/Obst Rd/ Bulverde Rd. at Cibolo Creek
  - Specht/Obst Road at Cibolo Creek
  - Smithson Valley Road (n. of FM 1863) - numerous creek crossing locations



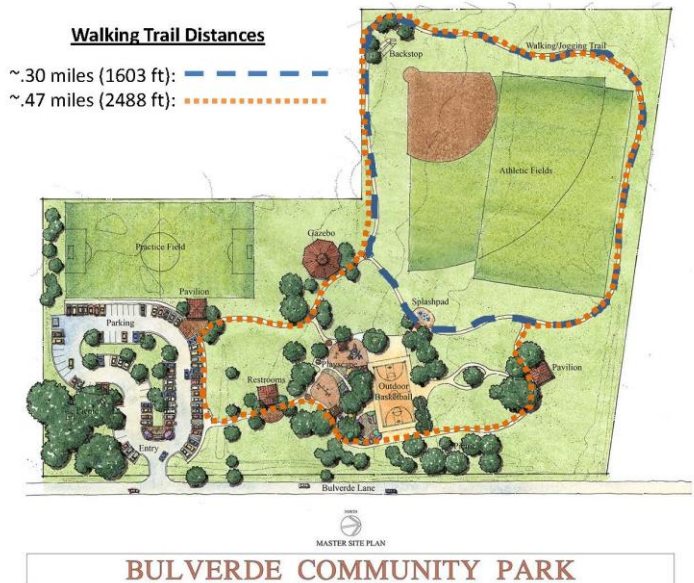
Examples of  
New bridges





# RECOMMENDED HIKE & BIKE FACILITIES AND RAPID TRANSIT BUS FACILITIES

- Proposed Hike and Bike Trail Locations
  - Parallel Cibolo Creek from Bulverde Community Park to East ETJ Limits along Bulverde Lane, Bulverde Road, FM1863, and the Creek
  - Travel north from Bulverde Community Park along Bulverde Road to SH 46
  - Extend west from Bulverde Road along Ammann to West ETJ Limits







# RECOMMENDED BUS RAPID TRANSIT FACILITIES

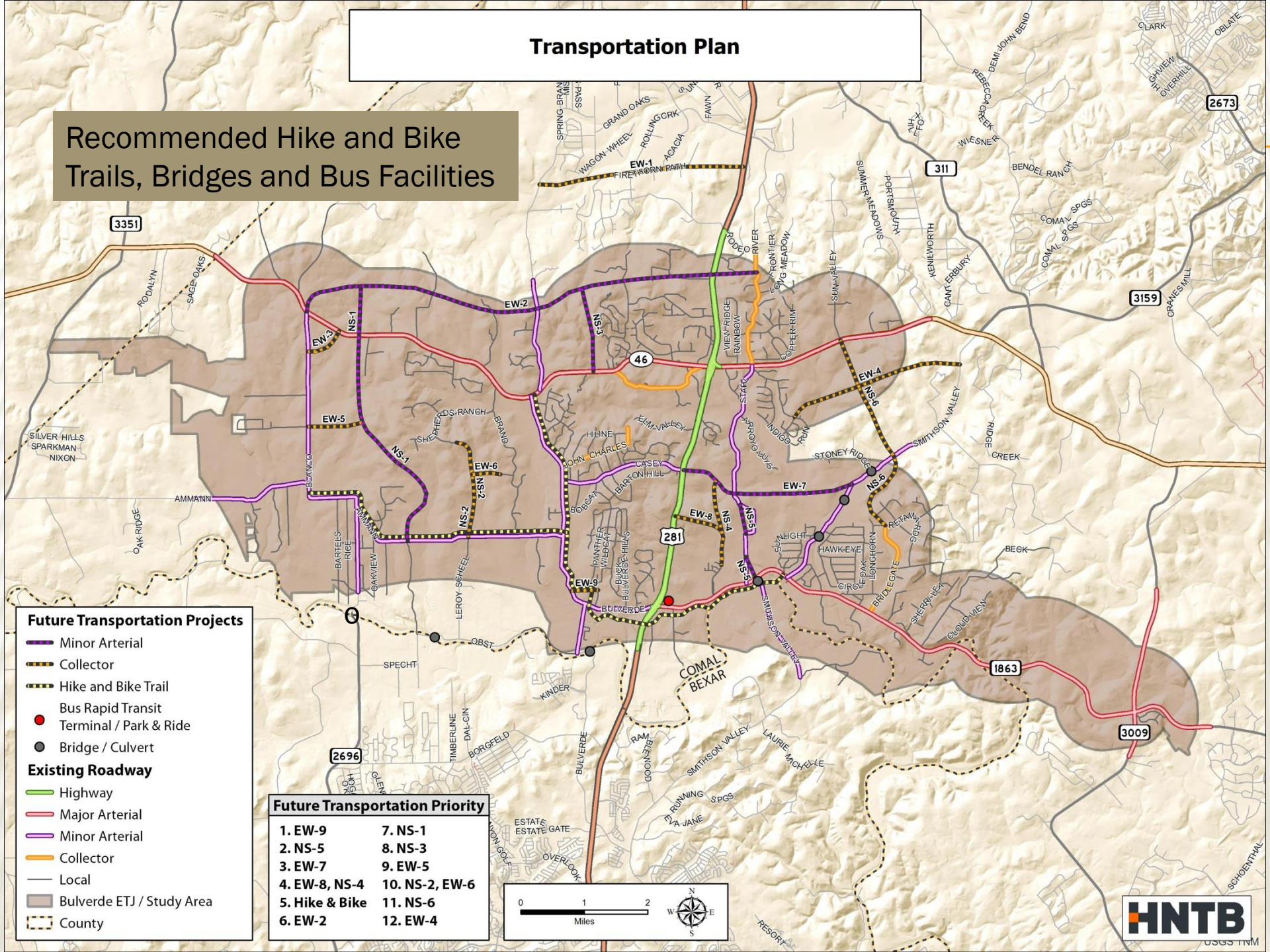
- Bus Rapid Transit Park and Ride Parking Lot and Station
  - Northeast corner of US 281 and FM 1863
  - Implement with new development at this intersection and in cooperation with VIA Metropolitan Transit Authority
  - Model after VIA proposed facilities on US 281 at Stone Oak (See VIA Renderings below)





# Transportation Plan

## Recommended Hike and Bike Trails, Bridges and Bus Facilities







# NEXT STEPS



## NEXT STEPS

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- Finalize and publish the Transportation Master Plan
- Address a variety of policy issues that have been identified during the Transportation Study
- Define the scope and cost estimate for high priority projects
- Survey the condition of the existing streets and refine the existing street maintenance plan
- Examine a full range of funding and financial alternatives
- Prepare a Capital Improvements Program for next 10-15 years





## NEXT STEPS (CONT.)

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- Prepare a financing plan to accompany the CIP
- Develop a one-year Capital Budget to include in FY 2016 Budget
- Develop a program and schedule for the implementation of selected street and hike and bike trail improvement projects
- Select engineering firm(s) to design and prepare construction documents for individual projects in the Capital Budget.
- Update City Ordinances, Policies, and Guidelines for Subdivision Plans



# SUBDIVISION PLANNING

- **Update City Ordinances, Policies, and Guidelines for Subdivision Plans**
  - Include street standards for proposed new streets
  - Set standards for sidewalks, hike and bike trails, and park facilities in new subdivisions
  - Define the level of developer participation in the cost of roadways, sidewalks, and hike and bike trails through their developments
  - Ensure that utility agencies are included in the planning and design of streets and easements in new subdivisions
  - Coordinate with the School District to protect sites for new schools in or near new subdivisions
  - Develop drainage standards and flood control programs to protect 100-year flood plains from new development
  - Update building codes to the latest available standards
  - Consider landscaping and streetscape improvements in new subdivisions
  - When reviewing plans, ask for innovative development patterns to improve the quality of life in new developments





# POLICY ISSUES

## **General Law City Status vs Home-Rule Charter**

- Population over 5,000
- Develop Home-Rule Charter

## **Annexation Policy**

- Should focus on close-in land now in the ETJ and also on newly developing areas
- Can use new tax base to pay for roads and services to newly annexed areas

## **Wastewater System Improvements**

- A wastewater system to serve newly annexed areas would entice voluntary annexation of new developments.
- New sewer lines should be placed under streets in new subdivisions and commercial areas



# POLICY ISSUES

## Coordination with Other Agencies

- Coordinate with Comal County, TXDOT, and MPO for transportation planning, priority setting, funding options, standards, operations and maintenance, emergency services
- Could also reach out to Bexar County, Blanco County and Kendall County relative to:
  - Long range transportation planning and improvements to US 281, SH 46, Ammann Road, and other interconnecting roadways.
  - Coordination on public safety, drainage and flood control, economic development, mutual aid, solid waste services, and other mutually beneficial activities

## With Regional water, electric, gas, and telecommunications agencies to:

- Develop standards for locating utility lines in City streets and other public ROW.
- Formulate procedures for extending services to existing customers, and to homes and new commercial enterprises in new developments.





City of Bulverde

# TRANSPORTATION MASTER PLAN

Master Transportation Plan Presentation  
Bulverde City Council and P & Z Commission  
City Hall, Wednesday October 8, 2014



# CITY OF BULVERDE TRANSPORTATION MASTER PLAN

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?? QUESTIONS ??